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EXAMINER

SHOSHQ,C

ART UNIT

PAPER NUMBER

1714

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/462,387

Applicant(s)
Daniel et al.

Examiner
Calli Shosho

Group Art Unit
1714



☒ Responsive to communication(s) filed on Jan 6, 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 13-27 is/are pending in the application

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 13-27 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☒ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 5

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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DETAILED ACTION

Specification

1. The substitute specification filed 1/6/00 has not been entered because it does not conform to 37 CFR 1.125(b) because:

(a) the statement as to lack of new matter under 37 CFR 1.125(b) is missing and

(b) a marked up copy of the substitute specification has not been supplied (in addition to the clean copy).

Claim Objections

2. Claim 14 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 14, which depends on claim 13, discloses that "the filler is silica". However, claim 13 also discloses "silica as filler". Therefore, claim 14 fails to further limit the subject matter of claim 13 given that it discloses identical filler limitation as claim 13.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 13-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claim 13 discloses a “rubber composition vulcanizable with sulfur, characterized in that it comprises..”. The scope of the claim is confusing because it is not clear what is meant by “characterized”. Either the rubber composition comprises the listed ingredients or it does not. It is suggested that “characterized in that it” is replaced with “which”.

(b) Claims 17, 18, and 20, which each depend on claim 13, disclose that the amounts of agent of formula (I), guanidine, and free aliphatic or cycloaliphatic amine, respectively, are calculated based “on the weight of silica or mixture of silicas as filler”. However, the scope of the is confusing given that claim 13 discloses that silica is the filler with no disclosure that mixtures of silica can be used. Clarification is requested.

(c) Claim 23, which depends on claim 22 which in turn depends on claim 13, recites the limitation “the solvent” in line 3. There is insufficient antecedent basis for this limitation in the claim given that there is no previous disclosure of solvent in claim 23 or in either claims 22 or 13.

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Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 13-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakafutami et al. (U.S. 5,804,644).

Nakafutami et al. disclose a sulfur vulcanized rubber composition comprising (i) 100 parts rubber such as polybutadiene, styrene-butadiene, isoprene rubber, and styrene-butadiene-isoprene, (ii) 10-150 phr silica, (iii) 0.1-20 phr coupling agent, identical to that presently claimed, which links silica and polymer, (iv) 1.5 phr guanidine, and (v) 0.001-10 phr amine such as diphenylamine. Based on the above amounts, it is calculated that the composition contains 0.07-200% coupling agent, 1-15% guanidine, and 0.01-100% amine all calculated on the weight of silica. Even more specifically, it is disclosed that the composition contains 8-11% coupling agent, 2.5-7.5% guanidine, and 2-5% amine calculated on the weight of silica and that the filler contains 44-100% silica. It is disclosed that the amine is added to the composition after the polymerization of the polymer but before stripping of the solvent. It is further disclosed the

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composition is suitable for use in a tire tread composition (col.3, lines 43-55, col.6, lines 18-23, 35-44, and 62-64, col.7, lines 5-17, col.8, lines 34-42, col.13, lines 54-58, and Table 6). Although there is no explicit disclosure that the amine is homogeneously dispersed in the composition, given that the amine is mixed with the other ingredients in the composition (col.8, line 50-col.9, line 5), it is clear that the amine is inherently homogeneously dispersed in the composition.

In light of the above, Nakafutami et al. anticipate the present claims.

7. Claims 13-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Jalics et al. (U.S. 5,708,053).

Jalics et al. disclose a sulfur vulcanized rubber composition comprising (i) 100 parts rubber such as polybutadiene, solution polymerized styrene-butadiene, polyisoprene, and EPDM, (ii) 10-150 phr silica wherein silica is the only filler present in the composition, (iii) up to 4 phr sulfur containing organosilicon, identical to that presently claimed, which links silica and polymer, (iv) 0.05-3 phr guanidine, and (v) 1-5 phr free aliphatic amine. Based on the above amounts, it is calculated that the composition contains approximately 3-40% sulfur containing organosilicon, 0.03-30% guanidine, and 0.7-50% amine all calculated on the weight of silica. Even more specifically, it is disclosed that the composition contains, for instance, 14% sulfur containing organosilicon, 3% guanidine, and 3% amine calculated on the weight of silica. It is disclosed that the amine is added to the composition after the polymerization of the polymer but before stripping of the solvent. It is further disclosed the composition is suitable for use in a tire

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tread composition (col.1, lines 35-44, col.2, lines 28-39 and 56-63, col.6, line 64-col.8, line 18, col.8, lines 37-39 and 44-47, col.9, lines 1-3, 14-17 and 44-61, and example 3). Although there is no explicit disclosure that the amine is homogeneously dispersed in the composition, given that the amine is mixed with the other ingredients in the composition for several minutes (col.9, lines 18-43 and col.11, lines 25-32), it is clear that inherently the amine is homogeneously dispersed in the composition.

In light of the above, it is clear that Jalics et al. anticipates the present claims.

8. Claims 13-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Halasa et al. (U.S. 5,534,592).

Halasa et al. disclose a sulfur vulcanized rubber composition comprising (i) 100 parts rubber such as polybutadiene and styrene-butadiene, (ii) 10-250 phr silica, (iii) 0.01-1 parts sulfur containing organosilicon based on the amount of silica, identical to that presently claimed, which links silica and polymer, (iv) 0.1-2.5 phr guanidine, and (v) 0.25-10 phr free aliphatic amine. It is disclosed that the composition contains 100% silica. Based on the above amounts, it is calculated that the composition contains approximately 1-100% sulfur containing organosilicon, 0.04-25% guanidine, and 0.1-100% amine all calculated on the weight of silica. Even more specifically, it is disclosed that the composition contains, for instance, 15% sulfur containing organosilicon, 3% guanidine, and 1.4% amine calculated on the weight of silica. It is disclosed that the amine is added to the composition after the polymerization of the polymer but before stripping of the

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solvent. It is further disclosed the composition is suitable for use in a tire tread composition (col.8, line 65-col.10, line 4, col.12, lines 47-54, col.13, lines 8-16, and example 12). Although there is no explicit disclosure that the amine is homogeneously dispersed in the composition, given that the amine is mixed with the other ingredients in the composition for several minutes (col.11, line 57-col.12, line 27), it is clear that inherently the amine is homogeneously dispersed in the composition.

In light of the above, it is clear that Halasa et al. anticipates the present claims.

9. Claims 13-21 and 26-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Bomal et al. (U.S. 6,140,393).

Bomal et al. disclose a sulfur vulcanized rubber composition comprising (i) 100 parts rubber such as polybutadiene and styrene-butadiene, (ii) silica wherein silica is the only filler present in the composition, (iii) sulfur containing organosilicon, identical to that presently claimed, which links silica and polymer, (iv) guanidine, and (v) free aliphatic amine. It is further disclosed the composition is suitable for use in a tire casing composition (col.1, lines 8-12, col.15, lines 1-5, col.15, line 61-col.16, line 26, and example 5). Based on example 5, it is calculated that the composition contains approximately 5% sulfur containing organosilicon, 2% guanidine, and 2.4% amine all calculated on the weight of silica.

In light of the above, it is clear that Bomal et al. anticipates the present claims.

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10. Claims 13-14, 16, and 24-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Segatta et al. (U.S. 5,396,940).

Segatta et al. disclose a rubber composition which contains (i) rubber such as polybutadiene, styrene-butadiene, styrene-isoprene-butadiene, and polyisoprene, (ii) silica coupling agent which links silica and polymer, (iii) silica wherein silica is the only filler present in the composition, (iv) guanidine, and (v) free aliphatic amine. It is disclosed that the composition is suitable for use in a tire tread composition (col.1, line 63-col.2, line 8, col.2, lines 38-40, col.3, lines 12-68, col.4, lines 3-17, 36-39, and 51-54, and col.5, lines 39-46).

In light of the above, it is clear that Segatta et al. anticipates the present claims.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segatta et al. (U.S. 5,396,940).

The disclosure with respect to Segatta et al. in paragraph 10 above is incorporated here by reference.

Further, it is disclosed that the rubber composition of Segatta et al. contains 100 parts rubber, 0.5-85 phr silica coupling agent, 5-85 phr silica, 0.2-5 phr guanidine, and 0.1-10 phr amine. Based on the silica and 0.16-170% sulfur containing organosilicon, 0.2-100% guanidine, and 0.12-200% amine all calculated on the weight of silica (col.1, line 63-col.2, line 8, col.2, lines 38-40, col.3, lines 12-68, col.4, lines 3-17, 36-39, and 51-54, and col.5, lines 39-46).

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While Segatta et al. fails to exemplify the presently claimed composition nor can the claimed composition be "clearly envisaged" from Segatta et al. as required to meet the standard of anticipation (cf. MPEP 2131.03), nevertheless, in light of the overlap between the claimed composition and the composition disclosed by Segatta et al., it is urged that it would have been obvious, as well as within the skill level, of ordinary skill in the art, to use the composition which is both disclosed by Segatta et al. and encompassed within the scope of the present claims and thereby arrive at the claimed invention.

14. Claims 13-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Nakafutami et al. (U.S. 5,804,644), Jalics et al. (U.S. 5,708,053), or Halasa et al. (U.S. 5,534,592) in view of EP 747425.

The disclosure with respect to Nakafutami et al., Jalics et al., or Halasa et al. in paragraphs 6, 7, and 8, respectively, are incorporated here by reference.

The difference between either Nakafutami et al., Jalics et al., or Halasa et al. and the present claimed invention is the requirement in the claims of specific type of polymer.

EP 747425, which is drawn to tire tread composition, disclose the use of amino-containing diene polymer rubber in order to produce a tire with good rebound resilience, tensile properties, and abrasion resistance (page 2, lines 5-7 and 42-50).

In light of the motivation for using amino- containing diene polymer rubber disclosed by EP 747425 as described above, it therefore would have been obvious to one of ordinary skill in

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the art to use this polymer in the rubber composition of either Nakafutami et al., Jálícs et al., or Halasa et al. in order to produce a composition with good rebound resilience, tensile properties, and abrasion resistance, and thereby arrive at the claimed invention.

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Terakawa et al. (U.S. 5,569,690) disclose a rubber composition suitable for use in tires which contains rubber and amine.

Thurn et al. (U.S. 3,873,489) disclose a rubber composition suitable for use in tires which contains rubber, silica, and organosilane.

Patitsas et al. (U.S. 5,580,513) disclose a rubber composition suitable for use in tires which contains rubber, organosilane, and amine antioxidant.

Wolff et al. (U.S. 4,229,333) and Zanzig et al. (U.S. 5,817,719) disclose a rubber composition suitable for use in tires which contains rubber, silica, organosilane, and guanidine.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie Shosho whose telephone number is (703) 305-0208. The examiner can normally be reached on Mondays-Thursdays from 7:00 am to 4:30 pm. The examiner can also be reached on alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (703) 306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

C.S.

Callie Shosho

11/13/00

Vasu Jagannathan
Vasu Jagannathan
Supervisor
Art Unit 1714
11/13/00